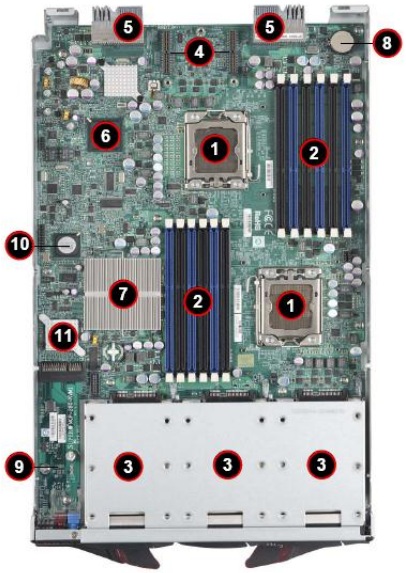
Product Overview

The Acer AB460 F1 blade server intelligently works together with Acer blade enclosure. Built to meet the growing demands of expanding large-enterprise data centers, cluster computing applications, or heavy and diverse workloads, Acer AB460 F1 offers optimized density, availability, flexible storage expansion, and manageability by sharing the same power supplies, cooling fans, manageability utilities, and network switches, while delivering outstanding energy efficiency in a dense environment.

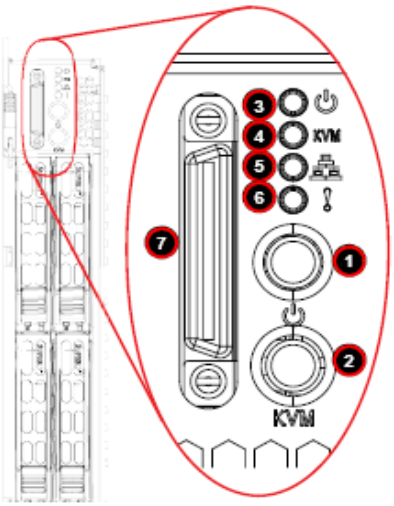
AB460 F1 Server Blade Overview

1. Up to 6 x 2.5" hot-plug SAS, SATA HDD, or SSD

AB460 F1 Server Blade Internal view



1. Up to Two Intel® Xeon® 5600 series processors
2. Up to Twelve ECC DDR3 1333 MHz registered or unbuffered memory slots
3. Support for up to six hot-plug 2.5" SAS or SATA hard drives or solid state drives with software RAID 0 and 1 support
4. PCI Express® 2.0 x8 mezzanine card slot
5. Mid-plane connectors
6. Intel ICH10
7. Intel 5500 Chipset
8. Battery
9. Front I/O module
10. BIOS Chip
11. LSI 2008 6G SAS controller



AB460 F1 Server Blade Front Indicator Overview

1. Power button
2. KVM button
3 Power LED
4. KVM/ID LED
5. Network/InfiniBand LED
6. Status/fault indicator
7. KVM connector

What's New

- New Intel® Xeon® 5600 Series processors
- InfiniBand with QDR connection
- Hot-plug and high-efficiency 94%+ power supply module

AB460 F1 Blade Specifications

Processors and Chipset

- Up to two Intel Xeon 5600 series processors, up to 3.06 GHz
- DDR3 memory

Memory

- Memory capacity[1]:
  - Registered DIMM: 2, 4, 8, 16 GB[2]
  - Unbuffered DIMM: 2, 4 GB
- Up to 192 GB registered DIMMs when fully populated with two DIMMs per channel, 12 slots
- Up to 48 GB unbuffered DIMMs when fully populated with two DIMMs per channel, 12 slots

Network Controllers

- Integrated dual-port Intel 82576EB Gigabit Ethernet Controller

[1] Mixed use of registered memory and unbuffered ECC memory not supported.
[2] 16 GB of memory availability by region/country..

Graphics controller
- iBMC controller embedded
- 16 MB video memory
- 1280x 1024 with 16 M colors resolution supported

Storage
- Hard disk form factor: 2.5”
- Type: SAS/SATA/SSD
- HDD Maximum capacity:
  - 2.5” SAS HDD capacity: 73 GB, 146 GB, 300 GB, 450 GB, 600 GB
  - 2.5” SATA HDD capacity: 150 GB, 300 GB, 500 GB
  - 2.5” SSD capacity: 32 GB and 64 GB
- Optional drive: N/A
- Floppy drive: N/A

Storage Controllers
- Integrated LSI 2008 SAS 2.0 (6 x 3 Gb/s SAS ports) with RAID 0,1,10 support

Expansion slots
- One PCIe 2.0 x8 mezzanine card slot

Management
- Acer Smart Blade Manager for all Acer server blades within the managed network
- Acer Smart Blade Console for server blades within Acer Blade Enclosure
- Acer Smart Console for components within Acer server blade

Security
- Administrator password
- Power-on password

Deployment/Serviceability
- Tool-less chassis entry and component
- Tool-less rackmount kit
- Acer Smart Setup
- BIOS update tool, supporting DOS and Windows OS
- IPMI Firmware update tool, supporting DOS and Windows OS

Operating Systems
- Windows Server® 2008
- Windows Server® 2008 R2
- Windows Server® 2003
- Red Hat® Enterprise Linux 5
- SuSE® Linux Enterprise Server 11
- VMware ESXi™ 4
- VMware ESX™ 4

Input/output interface

Front

- KVM button
- KVM/ ID LED
- KVM connector
- One VGA port
- One Power/off button
- LED indicators: power, HDD activity, LAN port 1 through 4, Infiniband and ID

Rear

- Two proprietary connectors to connect to mid-plane

Chassis/Form Factor

- Proprietary

Power Supply

- Please refer to the AB7000 blade enclosure power specifications

Regulatory Compliant Standards

EMC

- FCC
- CE

Safety

- UL
- CB

Technical Specifications

Dimensions	11.32”(H) x 1.67”(W) x 18.9”(D)/ 42 (W) x 480 (D) x 288 (H) mm	
Form factor	Proprietary. 10 blades up to 7U enclosure rack mountable	
Weight	Minimum 9.6 kg approximately (basic configuration: one cpu, one memory dimm, one HDD) Maximum 13.8 kg approximately (maximum configuration: 2 CPU, 12 DIMMs, and 6 HDD)	
Power Specifications	Listed in the AB7000 Enclosure power specification	
System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level, no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Acoustic Noise	Listed in the AB7000 Enclosure Acoustic Specifications.	

Standard Features

Processors

Intel Xeon Six-Core processor

X5675 (12 MB L3 cache, 3.06 GHz, 6.4 GT/s, DDR3-1333 MHz, 95 W)

X5650 (12 MB L3 cache, 2.66 GHz, 6.4 GT/s, DDR3-1333 MHz, 95 W)

Intel Xeon Quad-Core processor

E5620 (12 MB L3 cache, 2.40 GHz, 5.86 GT/s, DDR3-1066 MHz, 80 W)

L5630 (12 MB L3 cache, 2.13 GHz, 5.86 GT/s, DDR3-1066 MHz, 40 W)

E5606 (8 MB L3 cache, 2.13 GHz, 4.8 GT/s, DDR3-1066 MHz, 80 W)

Chipset

Intel 5500 Chipset

Memory[3]	**Type**[4]	DDR3 1333 MHz registered memory DDR3 1333 MHz unbuffered memory
	DIMM sockets	12
	Capacity	Registered DIMM: 2 / 4 / 8 /16[5] GB Unbuffered DIMM: 2 / 4 GB
	Maximum capacity	Registered DIMM: 192 GB Unbuffered DIMM: 48 GB
Memory protection	ECC, Mirroring, Lockstep Mode, x8 SDDC	
Network controller	Integrated Intel® 82576EB dual port Gigabit Ethernet Controller per node	
Expansion slot	One PCIe Generation 2 x 8 mezzanine card slot	
InfiniBand	4x QDR (40 Gb/s) infiniband HCS (single & dual-port)	
	Internal Ports	Twenty internal 4x QDR ports
	External Uplink Ports	Sixteen 4x QDR external uplink ports (QSFP connectors)
	Bandwidth	4xQDR (40Gbps) non-blocking architecture, 2.88Tbps total switch bandwidth (36-port)
	Management	In-band infiniband IBML/CLI
	OS	Firmware upgradeable

[3] Mixed use of registered memory and unbuffered ECC memory not supported.

[4] Memory speed may run at 1333 MHz, 1066MHz, or 800 MHz depending on total memory modules installed and processor model.

[5] 16 GB memory module availability may vary by country/region

Storage controllers	Integrated LSI 2008 SAS2 (six 6 GB/s SAS ports) with RAID 0, 1, 10 support	
Integrated SAS	**Simultaneous drive transfer channels**	6 channels
	Transfer rate synchronous (maximum theoretical)	6 GB/s per channel
	Data transfer method	non-RAID mode RAID mode
	Drive support	SAS
	Protocol	SAS
	Feature	NCQ (Native Command Queuing)
	RAID levels supported	0, 1, 10
	RAID OS support	Windows Server® 2008 Windows Server® 2008 R2 Red Hat® Enterprise Linux 5.4 Novell SuSE Linux® Enterprise Server 11
Integrated Gigabit LAN Controller	Intel® 82576EB Gigabit Ethernet Controller (Dual Port 10/100/1000)	
	Virtualization acceleration	• Intel I/O Acceleration Technology • Virtual Machine Device Queues (VMDq) • PCI-SIG SR-IOV implementation
	Manageability	• NC-SI SMBus, PXE, iSCSI boot

Storage

Maximum internal storage	**Hard disk drive**	• Up to 6 hot-pluggable 2.5" SAS/SATA HDD, and SSD
	2.5” Maximum capacity	• Up to 3 TB SATA • Up to 3.6 TB SAS • Up to 384 GB SSD

Graphics	BMC chip embedded • 1280 x 1024 • 16 M colors • 16 MB video memory

Industry standard compliance	IPMI 2.0 Compliant SMBIOS 2.5 Compliant ACPI v3.0b Compliant PCI 2.3 Compliant PXE support WOL support Microsoft Windows Hardware Logo Program Requirements
Security	Administrator password Power-on password USB port control
System cooling	• Two CPU heat sinks supporting Intel Xeon processors with up to TDP 95 W • Four 90 mm fans integrated in each power supply module
Operating systems and virtualization software support	Windows® Server® 2008 Windows® Server® 2008 R2 Red Hat® Enterprise Linux 5.4 SUSE® Linux Enterprise Server 11 VMware ESXi™ 4 VMware ESX™ 4

Server Management Utilities and Applications

Comprehensive management solutions deliver powerful and intuitive management features to simplify server set ups, configuration, management, monitoring, and reporting for the entire lifecycle of servers. Centralized administration and automatic management with remote access control free the IT resources and meet the complex business environment. Proactive monitoring and notification lead higher customers' satisfaction and higher levels of operational efficiency.

Acer Smart Setup 2.0	Easy deployment via the latest version of Acer's Smart Setup. Smart Setup is available both in box as a driver packed installation DVD or a downloadable file to be put into a USB 2.0 device, and eases the deployment of Acer servers for any certified OS. Through its unique interface, users may select to have all the correct drivers be pre-deployed for the OS of their choosing, as well as setup hardware RAID devices, BMC settings (where available), and even clone the pre-settings to a bootable USB device to ease mass server deployments.
Acer Smart Console	A default build web-based management utility to simplify system management with embedded in iBMC, system monitoring and alerting, event handling, remote power control and KVM-over-IP. It is OS independent and offers virtual media through floppy, ODD, and removable disk
Acer Smart Blade Console	A default bundle built-in web-based management console designed for all Acer server blades in the Acer Blade Enclosure offering health monitoring, alert notification, and KVM-over-IP remote management.
Acer Smart Blade Manager	A default bundle management tool offering remote management for system health and performance for the entire Acer server blades within the managed network. • Delivering proactive event management features including system event logging, and setting SNMP Trap (PET) alerting. • Allowing remote control from KVM and Power control
Intelligent manageability	• Automatic Server Recovery (ASR) • Integrated Management Log • Front and Rear ID button/LED • BIOS Update tool for DOS • IPMI Firmware Update tool supporting DOS and Windows OS and Linux
Environment-friendly products and approach	Acer offers end-of-life product return, trade-in, and recycling programs in many geographic areas. Products returned to will be recycled, recovered or disposed of in a responsible manner.

Memory Support Specification

Registered type[6]	DDR3 1333 MHz registered	
	Capacity:	2, 4, 8, 16 GB[7]
	Voltage:	1.5 V
	Maximum:	192 GB per node
Unbuffered type	DDR3 1333 MHz unbuffered ECC	
	Capacity:	2, 4 GB
	Voltage:	1.5 V
	Maximum:	32 GB per node
Memory Protection	Memory protection: ECC, mirroring, sparing, lockstep mode, x4/x8 SDDC	

* Mixed use of registered memory and unbuffered ECC memory not supported.

Memory Population

The systems have twelve DIMM slots. Each CPU controls six slots. The DIMM slots support DDR3-1333 registered/unbuffered ECC memory modules.

- Each CPU has three memory channels (channel 1, 2 and 3)
- Each channel has 2 slots

The socket furthest from the CPU is socket A **(P1DIMM1A, P1DIMM2A, P1DIMM3A in blue color)**, while the nearest is socket B **(P1DIMM1B, P1DIMM2B, P1DIMM3B in black)**. For all memory modes, socket A in each channel needs to be populated first. If socket A is empty, socket B cannot be used. It is recommended that the higher rank and largest capacity DIMM be installed in slot A.

NOTE:

- In a single-processor server, memory modules are installed into the P1DIMMxx slots.
- The P2DIMMxx slots are enabled when a second CPU is installed on the main board.

For the system to function properly, DIMM modules must be installed following the slot sequence listed below. DIMM modules of the same type, size and manufacturer must be installed in the same DIMM colored slots.

- CPU 1 – populate DIMM slot P1DIMM1A first, followed by slots P1DIMM2A, P1DIMM3A, P1DIMM1B, P1DIMM2B, P1DIMM3B.
- CPU 2 – populate DIMM slot P2DIMM1A first, followed by slots P2DIMM2A, P2DIMM3A, P2DIMM1B, P2DIMM2B, P2DIMM3B.

DIMM slot notation illustrated in table below:

CPU1 (Rear CPU)	P1DIMM1B	P1DIMM1A	P1DIMM2B	P1DIMM2A	P1DIMM3B	P1DIMM3A
	Black	**Blue**	**Black**	**Blue**	**Black**	**Blue**

CPU2 (Front CPU)	P2DIMM1B	P2DIMM1A	P2DIMM2B	P2DIMM2A	P2DIMM3B	P2DIMM3A
	Black	**Blue**	**Black**	**Blue**	**Black**	**Blue**

[6] ***Memory speed may run at 1333 MHz, 1066MHz, or 800 MHz depending on total memory modules installed and processor model.
[7] 16 GB memory modules available by special request only

Independent mode (please refer to the User Guide for more information)

- In this mode all memory is accessible and ECC protected

Single-processor configuration

Total Memory	P1 1B	P1 1A	P1 2B	P1 2A	P1 3B	P1 3A
2GB		2GB				
4GB		2GB		2GB		
6GB		2GB		2GB		2GB
8GB	2GB	2GB	2GB	2GB		
12GB	2GB	2GB	2GB	2GB	2GB	2GB
4GB		4GB				
8GB		4GB		4GB		
12GB		4GB		4GB		4GB
16GB	4GB	4GB	4GB	4GB		
24GB	4GB	4GB	4GB	4GB	4GB	4GB
8GB		8GB				
16GB		8GB		8GB		
24GB		8GB		8GB		8GB
32GB	8GB	8GB	8GB	8GB		
48GB	8GB	8GB	8GB	8GB	8GB	8GB
16GB*		16GB				
32GB*		16GB		16GB		
48GB*		16GB		16GB		16GB
64GB*	16GB	16GB	16GB	16GB		
96GB*	16GB	16GB	16GB	16GB	16GB	16GB

** 16 GB memory modules available by special request only*

Dual-processor configuration

	CPU1						CPU2					
Total Memory	P1 1B	P1 1A	P1 2B	P1 2A	P1 3B	P1 3A	P2 1B	P2 1A	P2 2B	P2 2A	P2 3B	P2 3A
4GB		2GB						2GB				
8GB		2GB		2GB				2GB		2GB		
12GB		2GB		2GB		2GB		2GB		2GB		2GB
16GB	2GB	2GB	2GB	2GB			2GB	2GB	2GB	2GB		
18GB	2GB	2GB	2GB	2GB	2GB	2GB		2GB		2GB		2GB
24GB	2GB	2GB	2GB	2GB	2GB	2GB	2GB	2GB	2GB	2GB	2GB	2GB
8GB		4GB						4GB				
16GB		4GB		4GB				4GB		4GB		
24GB		4GB		4GB		4GB		4GB		4GB		4GB
32GB	4GB	4GB	4GB	4GB			4GB	4GB	4GB	4GB		
36GB	4GB	4GB	4GB	4GB	4GB	4GB		4GB		4GB		4GB
48GB	4GB	4GB	4GB	4GB	4GB	4GB	4GB	4GB	4GB	4GB	4GB	4GB
16GB		8GB						8GB				
32GB		8GB		8GB				8GB		8GB		
48GB		8GB		8GB		8GB		8GB		8GB		8GB
72GB	8GB	8GB	8GB	8GB	8GB	8GB		8GB		8GB		8GB
96GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
64GB*		16GB		16GB				16GB		16GB		
96GB*		16GB		16GB		16GB		16GB		16GB		16GB
128GB*	16GB	16GB	16GB	16GB			16GB	16GB	16GB	16GB		
144GB*	16GB	16GB	16GB	16GB	16GB	16GB		16GB		16GB		16GB
192GB*	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB	16GB

** 16 GB memory modules available by special request only*

Mirroring mode:

- In mirroring mode, the memory contains a primary image and a copy of the primary image therefore the effective size of memory is reduced by one half.
- Channel 3 has no function in these modes.
- Follow the population rules described in independent mode.
- Mirroring mode needs the channel 1 & channel 2 DIMMs to be identical. DIMM slot populations within a channel do not have to be identical but the same DIMM slot location across channel 1 and channel 2 must be the same. DIMM1A and DIMM2A should be the same type, size and manufacturer. DIMM1B and DIMM2B memory should be the same type, size and manufacturer. DIMM1C and DIMM2C memory should be the same type, size and manufacturer.
- Same rules apply to CPU2.
- Please refer to the User Guide for complete population rules for both single and dual processor configurations.

Lockstep mode:

- In Lockstep Channel Mode, each memory access is 128-bit data access that spans Channel 1 and Channel 2. This is done to support SDDC for DRAM devices with 8-bit wide data ports. The same address is used on both channels such that an address error on any channel is detectable.
- Lockstep Channel mode is the only RAS mode that supports x8 SDDC.
- Channel 3 has no function in these modes.
- Follow the population rules described in independent mode.
- Lockstep mode needs the channel 1 & channel 2 DIMMs to be identical. DIMM slot populations within a channel do not have to be identical but the same DIMM slot location across channel 1 and channel 2 must be the same. DIMM1A and DIMM2A should be the same type, size and manufacturer. DIMM1B and DIMM2B memory should be the same type, size and manufacturer. DIMM1C and DIMM2C memory should be the same type, size and manufacturer.
- Same rules apply to CPU2.
- Please refer to the User Guide for complete population rules for both single and dual processor configurations.

Sparing mode:

- In sparing mode, if the system detects degrading memory, the data in the failed channel will be copied to the spare channel. The failed channel is then isolated and the spare channel becomes active. Any uncorrectable error detected before the isolation will cause the system to stop normal operation.
- Channel 3 is the spare channel. Therefore, the effective size will be reduced by one-third.
- Follow the population rules described in independent mode.
- Sparing mode needs all three channels to utilize identical DIMMs. 1A, 2A and 3A should be the same type, size and manufacturer. 1B, 2B and 3B memory should be the same type, size and manufacturer. 1C, 2C and 3C memory should be the same type, size and manufacturer.
- Same rule is applied to CPU2.
- Please refer to the User Guide for complete population rules for both single and dual processor configurations.

Memory Identification

Generally, there is memory information printed on the label of the DIMM, but different vendors may have different formats. For example:

4GB 2Rx4 PC3-10600R xx xx xxx

1. Density

- 2GB, 4GB, 8GB, 16GB
- Intel® Xeon® 5600 series processors support DIMMs organized by 1Gb, 2Gb or 4Gb DRAM chips

2. Rank

- 1R = Single Rank
- 2R = Dual Rank
- 4R = Quad Rank

3. Bit Organization

- This platform supports x4 and x8
- Note: It's not recommend to mix DIMMs with different bit organizations in one system

4. Speed

- PC3 – 6400 => DDR3- 800
- PC3 – 8500 => DDR3- 1066
- PC3 – 10600 => DDR3- 1333

Hardware Key Options

CPU	• Intel® Xeon® 5600 series
HDD	• SAS 2.5”: 73 GB, 146 GB, 300 GB, 450 GB, 600 GB • SATA 2.5”: 150 GB, 300 GB, 500 GB • SATA SSD 2.5”: 32GB, 64GB
Memory	• DDR3 1333 MHz Unbuffered ECC 2/4 GB • DDR3 1333 MHz Registered memory 2/ 4/ 8/ 16GB
Rack kit	• Tool-less sliding rails for blade server
Backplane	• AB7000 Enclosure Mid-plane
Networking (select models)	• Mezzanine card – 40 GB IB, single port • Mezzanine card – 40 GB IB, dual port
Enclosure components	• Stand along CMM (Component Management Module) • 1/10Gb L2/3 Ethernet Switch • QDR IB Switch, 20 internal and 16 external connectors • QDR IB Switch, int. 20/ext. 16, with built-in mini CMM for IB redundancy • PDU (Power Distribution Unit) with NEMA L6 plug • Redundant 2500 W Power Supply Module with cooling fan (platinum) • Power cord from Blade PSU to outlet, 2.5M, NEMA L6-20 or equivalent, IEC-60320-C19, 20A, 250V for US

AB7000 Enclosure

AB7000 Enclosure intelligently works with Acer Server Blades. Up to 10 server blades power speed up with infiniband together sharing same power source, management module, thermal solution, and switch module in data center and high performance computing environments.

AB7000 Enclosure Front view

1. Up to 10 server blades
2. Front enclosure LED
   - Power LED (left)
   - Status LED (right)

AB7000 Enclosure Rear (Enclosure)

1. Up to two hot-plug one Gb / ten Gb L2/L3 Ethernet switches in Bay 1
2. Up to two hot-plug 40 Gb QDR InfiniBand™ switch modules (optional built-in mCMM) in Bays 2 and 3
3. Up to two hot-plug Component Management Modules (CMM) in Bay 3
4. Up to four hot-plug, high-efficiency (94%+) 2500 W power supply module with integrated system cooling fan (200 - 240 V only) in Bay 4

Technical Specifications (Enclosure)

Dimensions (WxDxH)	7 U form factor with 17.6" x 29" x 12.2" (447mm x 737mm x 310 mm)	

Enclosure Modules	• Up to 10 hot pluggable server blades
	  • AB460 F1 server blade
	  • AB2x280 F1 server blade
	• System management
	• 1 Gb / 10 Gb Ethernet switch
	• QDR InfiniBand switch
	• 10 GB Ethernet switch
	• Power supply	

Weight	100.2 kg (standard configuration with one server blade, one CMM, one ethernet switch, and four power supplies 250.5 kg (maximum configuration with full modules installed)	
Power supply (per power supply)	Up to four 2500 watts power supply modules with cooling fan integrated, 94% efficiency	
	Redundancy	3+1
	Range line voltage	200-240 VAC
	Rated input current	208A
	Rated input frequency	50-60 Hz
	Rated Input power	2500 Watts
	8Rated output power (steady-state)	2500 Watts
	Maximum Peak Power (output)	2500 Watts
BTU	8532.5 (maximum per power supply)	
System inlet Temperature	Operating	10° - 35° C (50° - 95° F) at sea level
	Non-operating	-40° - 70° C (-40° - 158° F)
Relative humidity (non-condensing)	Operating	8 - 90 % relative humidity
	Non-operating	5 - 95 % relative humidity (Rh)
Acoustic noise (per power supply)	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 25°C ambient environment. Noise emissions were measured in accordance with ISO 7779	
	Idle:	LpAm: 52 dB

Emissions classification (EMC)	FCC rating	Class A
	Normative standards	EN 55022 Class A, EN 61000-3-2/-3-3, CISPR 22 Class A EN 55024/CISPR 24, (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11), EN 60950/IEC 60950-Compliant

Power Supply Module Specifications

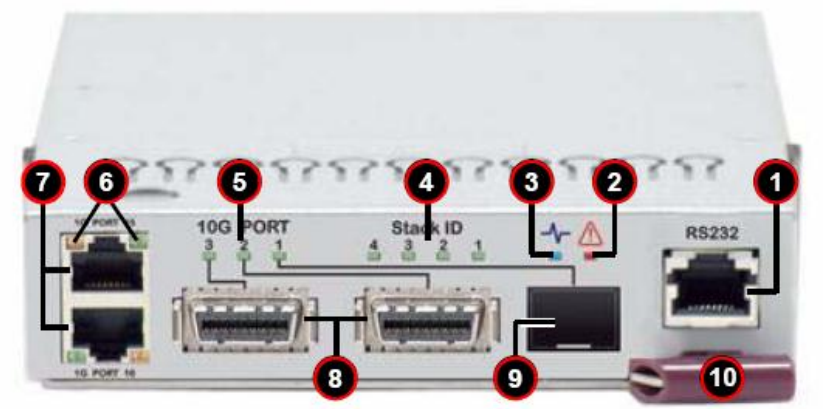
This 94% high efficiency 80PLUS Platinum level power supply module comes with intelligent power infrastructure monitors the power supplies and the power enclosure that connects to the blade management. Snap-in installation from the back of the chassis and hot-pluggable make it easy to service and maintain.

Category	Specification
Output	2500W
Type	Redundant Module (3+1)
+12V	208A
5VSB	16A
PFC	Yes
Peak Efficiency	94%
Input AC Range	200-240V
Operating Conditions	Temp: -5 to 50°C Humidity: 5 to 95% RH
Fan Type	4 x 90mm fans

1 KW = 3412 BTU/hr

1Gb/ 10Gb Ethernet Switch Module Specifications

The 1/10 Gigabit Ethernet layer 2/3 Switch module offers advanced switching features and connection to 10-Gigabit Ethernet networks. Offering two internal Ethernet paths to the CMM(s) allows better configuration, management, and control of the switch and its ports through a browser-based management interface. In addition to the Web-based GUI, it offers a CLI for flexibility in management and control of single or multiple switch networks.



Items	Function
1	RS-232 (COM) Serial Port
2	Module Fault Indicator
3	“Initiation OK” Indicator
4	Stack ID Indicators
5	10-Gbps Uplink Port Status Indicators
6	1-Gbps RJ45 Uplink Port Status Indicators
7	1Gbps RJ-45 Uplink Ports
8	CX4 10-Gbps Uplink Ports
9	SPF+ 10-Gbps Uplink Port
10	Module Release Handle

Category	Specification
Chipset	• Broadcom BCM56313
Internal Ports	• Twenty 1-Gbps downlink ports for LAN interfaces of the server blades
External Uplink Ports	• Three 10-Gbps uplink ports (Two CX4, stackable & One SFP+) • Two 1-Gbps RJ-45 uplink ports
Type	• Layer- 2 / 3 Switch
Bandwidth	• Up to 46Gbps non-blocking
Trunking	• Link aggregation support (802.3ad-full)
Jumbo Frame Support	• Up to 9k bytes
Remote Management	• Browser-based management / CLI
Layer 2 Capabilities	• STP, RSTP, MSTP, IGMP snooping, 802.1x
Layer 3 Capabilities	• BGP, DVMRP, IGMP, IPv6, OSPF, PIM, RIP
OS	• Firmware upgradeable

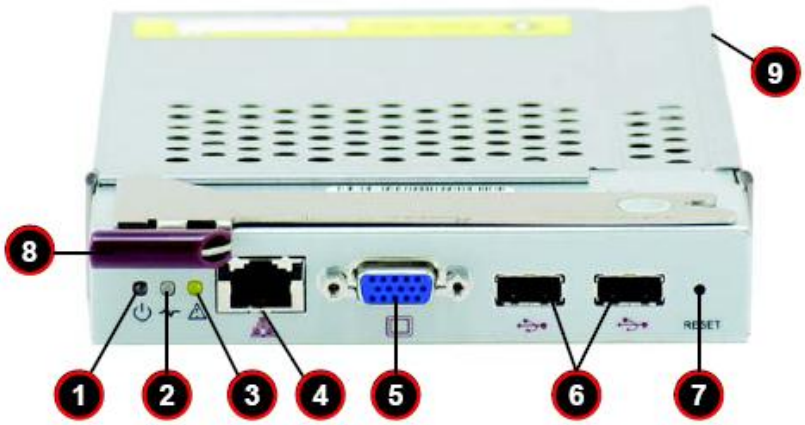
40Gb QDR Infiniband Switch Module Specifications

This switched based, point-to-point bi-directional serial link systems Switch module provides high-speed interconnectivity among the blade module and to external InfiniBand peripherals and are especially useful in supporting clustered High-Performance-Computing.

Category	Specification
Chipset	• Mellanox InfiniScale IV
Internal Ports	• Twenty internal 4x QDR ports
External Uplink Ports	• Sixteen 4x QDR external uplink ports (QSFP connectors)
Bandwidth	• 4xQDR (40Gbps) non-blocking architecture, 2.88Tbps total switch bandwidth (36-port)
Management	• In-band Infiniband IBML/ CLI
OS	• Firmware upgradeable

Chassis Management Module (CMM) Specifications

CMM provides total remote control of individual server blades, power supplies, cooling fans, and networking switches remotely. System administrators enjoy the management ease and reassurance of continuous onboard instrumentation monitoring (temperature sensors, power status, voltages and fan speed). Remote power control capabilities to reboot and/or reset the server are available as well as remote access to the BIOS configuration and operating system console information vial SOL (Serial over LAN) or embedded KVM capabilities. This controller is a separate processor, all monitoring and control functions operate flawlessly regardless of blade CPU operation or system power-on status.

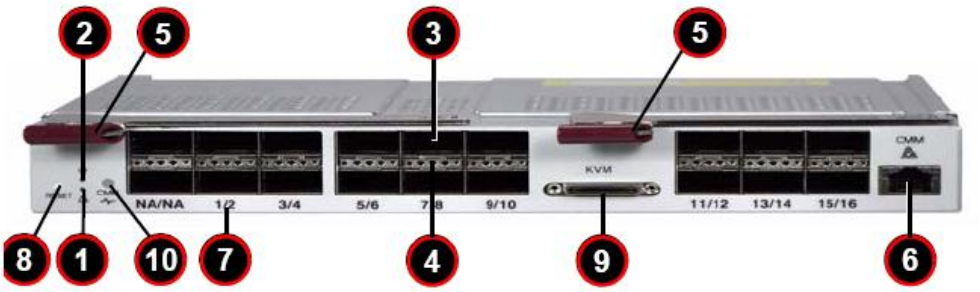


Items	Function
1	Power LED
2	Activity LED
3	Fault LED
4	Ethernet Port
5	VGA port
6	USB ports
7	Reset Button
8	Module Release Handle
9	USB 2.0/1.1 Switch (accessed as back of module, see below illustration)

Category	Specification
Management Capabilities	• Manage up to 10 server blades (w/ 20 nodes), switch modules and power supply modules
Ports	• One Ethernet port, one VGA port and two USB ports
Key Features	• Remotely manage and monitor server blades, power supplies, cooling fans, and networking switches • IPMI 2.0 compliant, with KVM over LAN / KVM over IP • Serial over LAN (SOL) • Media Redirection • LAN Alert-SNMP Trap • Event Log • OS Independent • Hardware Health Monitor • Remote Power Control • Management Tools – Acer Smart Blade Manager , CLI (Command Line Interface) • Supports RMCP & RMCP + Protocols
System Management	• System management interface provided via dedicated LAN
OS	• Firmware upgradeable

40 Gb QDR Infiniband Switch Module with miniCMM Specifications

- **Internal ports**
  - Twenty 4X QDR downlink ports
- **External uplink ports**
  - Sixteen 4X QDR QSFP uplink ports
  - One management Ethernet port
  - One KVM cable port
- **Type**
  - 4XQDR In
  - infiniband Switch
  - MiniCMM



No.#	Items
1	Fault LED
2	Status LED
3	External Ports (QSFP)
4	Port LED
5	Module Released Handle
6	MiniCMM Ethernet Port
7	Port Numbers
8	Reset Button
9	KVM cable connector
10	MiniCMM activity LED

Note 1: This module should be installed in the top bay (2+3)

Note 2: One KVM cable is default with blade enclosure shipment

Infiniband Mezzanine HCA Module Specifications

With low-latency and high-bandwidth for performance-driven server and storage applications in enterprise data centers and high-performance computing, Acer Infiniband Mezzanine HCA module simplifies network deployment by consolidating clustering, communications, storage, and management I/O and by providing enhanced performance in virtualization server environments.

Category	Specification
Chipset	• Mellanox ConnectX
Port	• Single or Dual QDR port (40Gb/s)
Key Features	• 1.2us MPI ping latency • PCI Express 2.0 (up to 5GT/s) • CPU offload of transport operations • End-to-end QoS and congestion control • Hardware-based I/O virtualization • TCP/UDP/IP stateless offload

Service and Support

Acer Servers offers a comprehensive service suite to take care of your hardware investment. Users can select the 3-year standard warranty or choose extended warranties and services[8].

The standard warranty for the AB460 F1 includes three years Parts coverage with all three years including Labor and On-Site coverage.

Warranty repairs may be accomplished through the use of Customer Replacement Unit (CRU) parts. CRU parts include: Hot Plug Hard Drives and Hot Plug Power Supplies. These parts are designed for easy replacement without tools. Travel and labor charges may apply if customers decline to replace a CRU part.

In a continuing effort to improve the quality of our products, information in this document is subject to change without notice. Images shown are only representations of some of the configurations available for this model. Availability may vary depending on region.

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[8] Extension warranty services vary by country. Please contact Acer authorized resellers for more information.

Acer Standard Server Models	**Part Number**
Acer AB460 SFF Models	
Acer AB460 F1 Blade Server Single Node with 1x Xeon E5606, 2x4GB DDR3 Reg, no HDD, 6x2,5"HDD bay, Onboard SAS 6G, 2x GBit LAN onboard	TX.R6300.006
Acer AB460 F1 Blade Server Single Node with 1x Xeon E5620, 2x4GB DDR3 Reg, no HDD, 6x2,5"HDD bay, Onboard SAS 6G, 2x GBit LAN onboard	TX.R6300.002
Acer AB460 F1 Blade Server Single Node with 1x Xeon X5650, 2x4GB DDR3 Reg, no HDD, 6x2,5"HDD bay, Onboard SAS 6G, 2x GBit LAN onboard	TX.R6300.003
Acer AB460 F1 Blade Server Single Node with 1x Xeon X5675, 2x4GB DDR3 Reg, no HDD, 6x2,5"HDD bay, Onboard SAS 6G, 2x GBit LAN onboard	TX.R6300.007
Acer AB460 F1 Blade Server Single Node with 1x Xeon L5630, 2x4GB DDR3 Reg, no HDD, 6x2,5"HDD bay, Onboard SAS 6G, 2x GBit LAN onboard	TX.R6300.005
Acer Blade Enclosures	
Acer AB7000 F1 Blade Enclosure. 7U Rack, up to 10 blades (no Blades included), Chassis Management Module (CMM), 1Gb/10Gb Ethernet Switch Module (20x 1Gbps ports for blades, 3x 10Gbps external ports), 4x 2500W 80+ Gold PSU (94% peak efficiency) w/ UPS Power Cord, Rack Rail Kit.	TE.R6T00.002
Acer Key Options	**Part Number**
Acer CPU Heatsink	
Note: one heatsink required for each processor option kit	
Acer Intel CPU heat-sink (TDP 95W supported) for 1U rack, Gemini, and blade server	TC.34900.005
Acer Processor upgrade kits	
Note: one heatsink required for each processor option kit	
Note: all processors in a system must match	
Acer Intel® Xeon® processor E5606 (B-1) Kit	TC.32500.041
Acer Intel® Xeon® processor E5620 (B-1) Kit	TC.32500.024
Acer Intel® Xeon® processor L5630 (B-1) Kit	TC.32500.026
Acer Intel® Xeon® processor X5650 (B-1) Kit	TC.32500.022
Acer Intel® Xeon® processor X5675 (B-1) Kit	TC.32500.039
Acer Memory	
Note: cannot mix Unbuffered memory with Registered memory	
Note: please refer to "Memory Support" Section for details on configuring memory	
Acer Unbuffered Memory	
Acer 2GB DDR3-1333 Unbuffered Memory Kit (1 pc.)	TC.33100.035
Acer 4GB DDR3-1333Unbuffered Memory Kit (1 pc.)	TC.33100.037

Acer Registered Memory	
Acer 2GB DDR3-1333Registered Memory Kit (1 pc.)	TC.33100.029
Acer 4GB DDR3-1333Registered Memory Kit (1 pc.)	TC.33100.031
Acer 8GB DDR3-1333Registered Memory Kit (1 pc.)	TC.33100.042
Acer Storage	
Acer SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
Acer 150GB 3Gb/s 10K 2.5-inch Enterprise SATA HDD Kit	TC.32700.090
Acer 300GB 3Gb/s 10K 2.5-inch Enterprise SATA HDD Kit	TC.32700.088
Acer 500GB 3Gb/s 7.2K 2.5-inch Enterprise SATA HDD Kit	TC.32700.046
Acer SAS Hot Plug SFF (2.5-inch) 10K Enterprise Drives	
Acer 146GB 6Gb/s 10K 2.5-inch Enterprise SAS HDD Kit	TC.32700.083
Acer 300GB 6Gb/s 10K 2.5-inch Enterprise SAS HDD Kit	TC.32700.081
Acer 450GB 6Gb/s 10K 2.5-inch Enterprise SAS HDD Kit	TC.32700.072
Acer 600GB 6Gb/s 10K 2.5-inch Enterprise SAS HDD Kit	TC.32700.070
Acer SAS Hot Plug SFF (2.5-inch) 15K Enterprise Drives	
Acer 73GB 6Gb/s 15K 2.5-inch Enterprise SAS HDD Kit	TC.32700.087
Acer 146GB 6Gb/s 15K 2.5-inch Enterprise SAS HDD Kit	TC.32700.085
Acer SATA Hot Plug SFF (2.5-inch) Enterprise SSD Drives	
Acer 32GB SLC SATA 2.5-inch Enterprise SSD Kit	TC.33900.003
Acer 64GB SLC SATA 2.5-inch Enterprise SSD Kit	TC.33900.004
Acer Additional Upgrades	
Acer 1/10Gb L2/3 Ethernet Switch Module for Blade Enclosure	TC.35900.007
Acer 4X QDR Infiniband Switch for Blade Enclosure	TC.35900.008
Acer 4X QDR Infiniband Switch w/ miniCMM Kit for Blade Enclosure	TC.35900.009
Acer Operating Systems	
Windows Server Enterprise 2008	
Acer ROK Windows SVR 2008 R2 Enterprise (64bit,25Clt,EN)	TC.34400.035
Acer ROK MICROSOFT Win SVR 2008 64bit Ent R2 10 Clt EN W/COA W/CD/DVD ACER 1-8CPU	TC.34400.034
Windows Server Standard 2008	
Acer ROK MICROSOFT Win SVR 2008 64bit Std R2 5 Clt EN W/COA W/CD/DVD ACER 1-4CPU	TC.34400.033
Windows Server Web Edition	
Acer ROK MICROSOFT Windows Server 2008 R2 Web(64bit,EN) Kit	TC.34400.075
Microsoft CAL's	
Acer Windows Server 2008 CAL EN (5 Device)	TC.34400.061
Acer Windows Server 2008 CAL EN (5 User)	TC.34400.063

Acer Services	
Acer Upgrade from 3 year Parts/3 years Labor/3 years On-Site to 3 years Parts/Labor/On-site service w/4hr response	146.AD316.003
Acer Upgrade from 3 year Parts/3 years Labor/3 years On-Site to 5 years Parts/Labor/On-site service w/4hr response	146.AD317.003